DOCUMENT RESUME

ED 234 912 PS 013 855

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TITLE A Reliable Measure of Children's Peer Sociometric Status.
PUB DATE Apr 83
NOTE 16p.; Paper presented at the Annual Meeting of the Southeastern Psychological Association (San Antonio, TX, April 21-23, 1983).
PUB TYPE Reports - Research/Technical (143) -- Speeches/Conference Papers (150)

EDRS PRICE MF01/PC01 Plus Postage.
DESCRIPTORS Classroom Research; Elementary Education; *Elementary School Students; Measures (Individuals); Peer Evaluation; Peer Relationship; *Rating Scales; *Research Problems; *Sociometric Techniques; *Test Construction; *Test Reliability

ABSTRACT

Basically, two different forms of the sociometric technique for assessing children's peer status exist: peer-nomination and peer-rating. Although more popular, the peer-nomination technique has several psychometric deficiencies; these limit research efforts attempting to identify correlations between peer sociometric status and other social variables. The peer-rating technique has not been widely adopted despite its superior psychometric properties. To develop a reliable sociometric instrument, a peer-rating test using a 5-point Likert-type scale was administered to 144 children in seven fourth- and fifth-grade classrooms. Students' names were presented in a random order on two forms of the test. One form centered on the context of work; the other centered on play. Retest data were collected from 6 to 9 weeks later. Using data combined from work and play forms of the measurement instrument, test-retest reliability coefficients (stability coefficients) were calculated for both-sexes, same-sex, and opposite-sex ratings of sociometric status. Comparisons were also made between opposite- and same-sex peer ratings and between work and play ratings. Results suggested that peer-rating forms of sociometric tests are reliable and psychometrically acceptable methods for measuring peer sociometric status. (The work form of the peer-rating scale is appended.) (RM)

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A Reliable Measure of Children's Peer Sociometric Status

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Running Head: CHILDREN'S PEER SOCIOMETRIC STATUS

Abstract

The assessment of children's peer sociometric status has been a popular research technique in the exploration of children's social development. However, the psychometric deficiencies of the frequently used peer-nomination sociometric instruments have limited research efforts correlating other social variables and peer sociometric status. Peer ratings of sociometric status are seldom used but stable measures of sociometric status. A 5-point Likert-type sociometric test with discrete visual reference points was presented to 144 elementary students. Stability coefficients and intercorrelations for ratings on work and play questions, and ratings by peers of the same sex, opposite sex, and both sexes are presented. Researchers interested in analyzing the relationship between peer sociometric status and other social variables should consider employing peer-rating sociometric instruments.

A Reliable Measure of Children's Peer Sociometric Status

Problem. The use of peer-sociometric status measures to assess the attractions and repulsions within a group has been an extremely popular research strategy since the pioneering work of Moreno (1934). Hartup (1970) estimated that the number of sociometric studies conducted in the previous 30 years numbered in the thousands, and a recent research review (Foster & Ritchey, 1979) indicated that peer-sociometrics are still popular techniques in the assessment of children's social development.

Much of the continued interest in children's peer-sociometrics is the result of their demonstrated correlation with the development of future social and personal disorders. Children's low peer-sociometric status has been demonstrated to correlate with the future incidence of inclusion on a psychiatric register, the occurrence of problems in adjustment to the military, and the development of adolescent behavioral problems (Cowen, Pederson, Babigian, Izzo, & Trost, 1973; Roff, 1961; Roff, Sells, & Golden, 1972). Consequently, researchers interested in children's social skills have used peer sociometric status as a screening and validation criterion.

There are basically two different forms of the sociometric technique: peer-nomination and peer-rating. Peer-nomination is the more traditional form of sociometric technique and has been popularized by the work of Gronlund (1959). Peer-nomination techniques (Table 1) can be divided into three subtypes: (a) positive choices (e.g., the student is asked to name the

three peers he would most like to play with); (b) negative choices (e.g., the student is asked to name the three peers he would least like to play with); and (c) best friends (e.g., the student is asked to name the three peers he would most like to have as best friends).

Insert Table 1 about here

Unfortunately, the more popular peer-nomination technique suffers from several psychometric weaknesses. Positive and negative choices appear to be measuring different dimensions of sociometric status, and the test-retest reliability is typically very poor (Foster & Ritchey, 1979; Greenwood, Walker, Todd, & Hops, 1979; Hartup, Glazer, & Charlesworth, 1967). Also, the technique yields rank-order data and the inherent problems of different N sizes across different classrooms seriously limits the interpretation of data. An illustration of the problems with peer-nomination sociometrics can be found in the work of Greenwood et al. (1979). Greenwood found higher correlations between observable social behaviors and teachers' judgements of children's social skills than between social behaviors and peer sociometric status. However, the correlation between the social behaviors and sociometric status was higher than the sociometric test-retest reliability coefficient. Greenwood employed a positive choice form of the peer-nomination

sociometric technique.

A second sociometric technique using peer ratings has been described by Roistacher (1974), but has not been widely adopted despite its superior psychometric properties. The development and dissemination of a psychometrically acceptable and reliable form of sociometric technique would greatly enhance both the identification of children with possible social skills deficits and the social validation of children's social skills.

Method. A peer-rating sociometric using a 5-point Likert-type scale was administered to 144 children in seven fourth- and fifth-grade classrooms. Retest data were collected from 6 to 9 weeks later. Students' names were presented in a random order on both a Work (Figure 1) and a Play form of the sociometric test, and every student rated every other student in their classroom. The Play sociometric form was identical to the

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Insert Figure 1 about here

Work form, and both provided the rater with several graphic and verbal cues. The sociometric tests were administered to an entire classroom in a group setting, and the administration required approximately 30 minutes. Test-retest reliability coefficients (stability coefficients) were calculated for both-sexes, same-sex, and opposite-sex ratings of sociometric status using data combined from the Work and Play forms. Comparisons

were also made between opposite- and same-sex peer ratings and between Work and Play ratings.

Results. The intercorrelations between all sociometric status ratings are presented in Table 2. (All reported correlations are Pearson product moment coefficients, but Spearman rho coefficients were equally significant.) The highest stability coefficient was obtained for opposite-sex ratings of sociometric status, r (144) = .82, $p < .001$. Stability coefficients for ratings by either same-sex peers or by both sexes were also significant at the .001 level, r = .79 and r = .81, respectively. Play

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Insert Table 2 about here

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and Work pretest ratings were highly correlated, r (144) = .92, $p < .001$, and stability coefficents for Work and Play ratings calculated individually were .79 and .78. The lowest correlation was between same-sex and opposite-sex peer ratings, r (144) = .59, $p = <.001$, and opposite sex peers were given much lower ratings than same sex peers (Table 3).

Insert Table 3 about here

Interpretation. Peer-rating forms of sociometric tests are reliable and psychometrically acceptable methods for the measurement of peer sociometric status. The present study

utilized a peer-rating sociometric which included explicit visual reference points -- smiling and frowning faces. Obtained stability coefficients ranged from .79 to .82 for ratings of peers by children of the opposite, same, or from both genders. Peers of the opposite sex were given lower ratings, but the ratings were positively correlated with ratings by peers of the same sex.

Combined the data indicate that peer ratings provide an internally consistent and stable measure of sociometric status. As Foster and Ritchey (1979) have suggested, the peer-rating technique has at least three advantages when compared to the peer-nomination procedure. First, it insures that every child is rated by all his or her peers and is not overlooked because he or she is neither extremely popular or unpopular. Second, the technique allows for a more detailed analysis of peer status through the use of multiple stimulus questions concerning status in work, play, etc. Third, the peer-rating technique avoids the problem of varying group sizes which often occurs when using peer-nomination techniques. In addition, peer-rating scales allow the calculation of a median score reflecting peer sociometric status and may be treated as interval data for use in multivariate correlation analysis (Nunnally, 1978).

The peer-rating technique has been infrequently used but has distinct psychometric advantages. The use of peer-rating sociometric techniques would enable researchers to further

define the relationship between sociometric status and behavioral variables (e.g., social interaction rates) for which conflicting data have been reported.

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Table 1

Three Peer-Nomination Sociometric Techniques

Positive Choices. Name the three students in your room that you most like to play with.
Negative Choices. Name the three students in your room that you least like to play with.
Best Friends. Name the three students in your room you would most like to have as your best friends.

Table 2

Intercorrelations Between Ratings of Peer Sociometric Status

Variables	2	3	4	5	6	7	8	9	10
1 Same 1	.79[a]	.84	.72	.59	.57	.83	.73	.81	.69
2 Same 2	-	.68	.83	.53	.62	.67	.81	.67	.80
3 Both 1		-	.81	.79	.68	.97	.81	.97	.77
4 Both 2			-	.72	.83	.79	.97	.81	.95
5 Opp 1				-	.82	.75	.69	.79	.71
6 Opp 2					-	.66	.80	.69	.80
7 Work 1						-	.79	.92	.74
8 Work 2							-	.79	.78
9 Play 1								-	.78
10 Play 2									-

Note. Same: ratings by same sex peers; Both: ratings by peers of both sexes; Opp: ratings by opposite sex peers; Work: ratings on Work sociometric form; Play: ratings on Play sociometric Form; 1 = pretest & 2 = posttest.

[a]All Pearson product moment correlation coefficients were significant at $p < .001$, ($N = 144$).

Table 3

Sociometric Status Ratings by Same- and Opposite-Sex Peers

Source	Mean
Males by Males	4.12
Males by Females	2.65
Females by Females	3.97
Females by Males	2.61

Figure Caption

Figure 1. Work form of the peer-rating sociometric instrument reduced to 64% of the original size.

1. NO: "I don't like to at all."
2. no: "I don't like to."
3. ?: "I don't care if I do or if I don't."
4. yes: "I like to."
5. YES: "I like to a lot."

How much do you like to work with _____?

1 2 3 4 5

NO no ? yes YES

How much do you like to work with _____?

1 2 3 4 5

NO no ? yes YES

How much do you like to work with _____?

1 2 3 4 5

NO no ? yes YES

How much do you like to work with _____?

1 2 3 4 5

NO no ? yes YES

How much do you like to work with _____?

1 2 3 4 5

NO no ? yes YES

How much do you like to work with _____?

1 2 3 4 5

NO no ? yes YES

How much do you like to work with _____?

1 2 3 4 5

NO no ? yes YES